barrier metal film and a metal film formed by an atomic layer deposition process, a remote plasma chemical vapor deposition process, or a combination thereof. Applicants do not understand the objection to this part of claim 1. The barrier metal film 4 and metal film 5 are clearly labeled in the drawings and the description is clearly set forth on page 7, lines 8-13. Those skilled in the art clearly understand what an atomic layer deposition process is and what a remote plasma chemical vapor deposition process is and therefore these well-known processed need no specific illustration.

Claim 12 has been canceled thereby the objection under rule 83(a) as far as it pertains to claim 12 is traversed.

The objection to claim 13 under rule 83(a) is also traversed as the metal film 5 is clearly labeled in the drawings and those skilled in the art clearly understand what an atomic layer deposition process is.

Accordingly, applicants respectfully submit that the drawing objections are either improper and should be withdrawn or are traversed.

Claims 1 and 2 have been objected because of the informalities. Applicants has amended claim 1, line 8, to recite --a gate-- rather than "the gate" and claim 2, line 3, to recite --by-- rather than "(by" in accordance with the comments of the Office Action. Applicants respectfully request that the objections to claims 1 and 2 be withdrawn.

Claim 1 has been provisionally rejected under the judicially created doctrine of obviousness type double patenting as being unpatentable over claim 1 of co-pending Application No. 09/882,103, claim 1 of co-pending Application No. 10/033,509, and claim 1 of co-pending Application No. 09/887,511.

Although Applicants disagree with the grounds for rejection of claim 1, a Terminal Disclaimer and requisite fee under Rule 1.20(d) to obviate the obviousness-type double patenting rejection has been submitted herewith to expedite prosecution of this application.

In view of the attached Terminal Disclaimer, Applicants respectfully request the reconsideration and reexamination of this application and the timely allowance of the pending claims.

Claims 1, 3-4, 11, 13-14 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Cha et al., U.S. 2002/0123189 A1 taken with Zheng et al., U.S./6,429,109 B1 and in view of Kang et al., U.S./6,287,965 B1. Claim 2 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Cha et al., U.S. 2002/0123189 A1 taken with Zheng et al., U.S./6,429,109 B1 and in view of Kang et al., U.S./6,287,965 B1 as applied to claim 1 above, and further in view of Nakajima et al. "Work function controlled metal gate electrode on ultrathin gate insulators." Claim 12 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Cha et al., U.S. 2002/0123189 A1 taken with Zheng et al., U.S./6,429,109 B1 and in view of Kang et al., U.S./6,287,965 B1 as applied to claim 1 above, and further in view of Prall et al., U.S./5,341,016. These rejections are respectfully traversed in view of the following.

The Examiner has acknowledged the claim for foreign priority under 35 U.S.C. § 119.

The present application was filed on December 26, 2001. Under the provisions of 35 U.S.C. § 119, the present application may be accorded the benefit of the priority date of Korean priority application no. 2000-85582, filed on December 29, 2000. The Cha et al. reference (U.S. Publication No. 2002/0123189 A1) as relied upon by the Examiner was filed in the U.S. Patent Office on June 25, 2001. The Zheng et al. reference (U.S. Patent No. 6,429,109 B1) as relied upon by the Examiner was filed in the U.S. Patent Office on December 14, 2001.

Enclosed herewith is a verified English translation of Korean priority application no. 2000-85582. The claim for priority under 35 U.S.C. § 119 is thus perfected and neither the Cha et al. nor the Zheng et al. reference are prior art to the present application under the provisions of 35 U.S.C. § 102 or, consequently § 103. Applicants therefore respectfully submit that the rejection of claims 1, 2, 3-4, 11, 12, 13-14 under 35 U.S.C. § 103(a) is improper, since the Cha et al. reference and the Zheng et al. reference do not qualify as statutory prior art. The Examiner is therefore respectfully requested to withdraw these corresponding rejections of claims 1, 2, 3-4, 11, 12 13-14 for at least the above reasons.

Therefore, Applicant respectfully requests reconsideration and allowance of this application.

The Commissioner is authorized to charge any fee deficiency required by this paper, or credit any overpayment, to Deposit Account No. 13-2855.

Respectfully submitted,
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February 6, 2003 By:

Michael R. Hull
Reg. No. 35,902

## VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Specification:

The title has been replaced with the following new title:

--METHOD OF FORMING A METAL GATE IN A SEMICONDUCTOR DEVICE USING ATOMIC LAYER DEPOSITION PROCESS--



In the Claims:

Claims 5-10 and 12 have been canceled without prejudice or disclaimer.

Claims 1 and 2 have been amended, as follows:

1. (Amended) A method of forming a metal gate in a semiconductor device comprising the steps of:

providing a silicon substrate having one or more device isolation films of a trench shape for defining an active region;

forming a gate insulating film on the surface of said silicon substrate by means of a thermal oxidization process;

sequentially forming a barrier metal film and a metal film for [the] a gate on said gate insulating film; and

patterning said metal film for the gate, said barrier metal film, and said gate insulating film,

wherein deposition of said barrier metal film and said metal film for the gate is performed by a process selected from a group consisting of an atomic layer deposition (ALD) process, a remote plasma chemical vapor deposition process, and a combination thereof.

2. (Amended) The method of forming a metal gate in a semiconductor device according to claim 1, wherein said thermal oxidization process is performed at a temperature in the range of 650°C through 900°C [(by] by means of wet ($H_2/O_2$) or dry ($O_2$) method.